



[12093/905]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Sydney KOEGLER
Serial No. : 10/669,278
Filed : September 23, 2003

For : TREATMENT PROCESS FOR REMOVING RADIOACTIVE
THORIUM FROM SOLVENT EXTRACTION LIQUID
EFFLUENT

Examiner : Ivars C. Cintins
Art Unit : 1724

DECLARATION UNDER 37 C.F.R. § 1.132

Michael B. Salisbury, 1268 Brentwood Ave.
residing at Richland, WA, hereby declare as follows:
99352

1. I have been employed by Framatome ANP, Inc. as

Principal Engineer since 01 July 1993

2. I hold B.S. Chem Engr degree from

Bryham Young Univ., awarded on April 1979

✓3. I am well acquainted with the state of knowledge and am skilled in the art of treatment processes for removing radioactive thorium from solvent extraction liquid effluent.

✓4. I have reviewed and understand the Specification, claims, and drawings of U.S. Patent Application Serial Number 10/669,278 ("the '278 application"), filed on September 23, 2003.

✓5. I have reviewed the Office Action mailed on June 10, 2004.

✓6. I have reviewed and understand the Request for Reconsideration (Amendment) filed on October 12, 2004 and January 15, 2005.

✓7. I have reviewed the Final Office Action mailed on May 4, 2005.

✓8. I understand that the Examiner has rejected claims 18 – 25 under 35 U.S.C. 112, first paragraph as stated at page 2 in the Office Action mailed on May 4, 2005:

"It appears essential that the step of passing the aqueous solution through the quantity of ion exchange resin for the removal of thorium (claim 18, lines 2-3) be carried out both continuously and at a substantially constant flow rate; since the specification clearly

indicates that these process conditions are required to achieve the object of the invention (see page 2, lines 15-16 and 19-20; page 3, lines 20-21; and page 4, line 1). Claims 18 -25 have been amended to recite that the flow rate is "substantially constant," but these claims still fail to recite the essential limitation that the process is carried out continuously; and therefore claims 18-25 are still not enabled by the disclosure.

✓9. I further understand that the Examiner stated at page 2 of the Final Office Action mailed on May 4, 2005 that claims 18-25 were rejected under 35 U.S.C. 112, second paragraph:

"Claims 18-25 fail to recite that the ion exchange resin treatment is carried out continuously; and therefore, these claims fail to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

✓10. I understand that claim 18 of the '278 application, as amended by the accompanying Amendment After Final recites:

18. A method for the pretreatment of an aqueous
solution containing radioactive thorium prior to passing the aqueous solution
through a quantity of ion exchange resin at a substantially constant flow rate
and continuously for removal of the thorium, comprising the steps of:
diluting the aqueous solution with water; and
removing organic material from the aqueous solution by filtering.

✓11. I furthermore understand that the Final Office Action mailed May 4, 2005 states on page 3:

Also, Applicant argues that the term "substantially constant" allows for a fluctuation flow rate, point out that the term "substantial" can mean "considerable in degree or amount." This argument has been noted and carefully considered, but is not deemed to be well founded. While considerable in degree or amount may be one definition of "substantial," the term "substantially constant," when taken in the context of the disclosure of the application, has been interpreted to mean essentially constant. Accordingly, while allowing for some minor occasional fluctuations in flow rate, a "substantially constant flow rate" will, for the most part, not vary from a preselected value.

✓12. It is my opinion that any person skilled in this art would, based on a reading of the Specification and claims of the '837 application, readily understands that flow rate as described in claim 18 may be varied. My opinion is based on the following:

a. The Specification, which states at page 2, lines 14 and 15 that "passing the aqueous solution through the quantity of ion exchange resin at a substantially constant flow rate."

b. The Specification, which states at page 2, lines 21 to 32, which state that "As the aqueous solution enters the ion exchange resin, the thorium ions in the aqueous solution are selectively bound by the ion exchange resin. As is well known in the art of ion exchange resins, an equilibrium is formed between thorium bound to the ion exchange resin and thorium in the aqueous solution flowing through the ion exchange resin. Therefore, the thorium from the aqueous solution passes through the ion exchange resin at a slower rate than the flow rate of the aqueous solution and the remainder of its time bound to the ion exchange resin. In the instant invention, since the average residence time of the thorium in the ion exchange resin is equal to or longer than the average time required for the radioactive decay of the thorium, each ion of thorium that is held by the ion exchange resin which decays and is washed off of the resin by the constant flow of aqueous solution is replaced by a fresh ion of thorium."

c. The Specification, which states at page 4, lines 18 to 23 that the "If the measured amount of thorium emerging from the bottom of the column at equilibrium is less than desired, then the amount of resin can be adjusted downwards and/or the flow rate of the aqueous solution through the resin can be adjusted upwards."

✓22. It is my opinion that any person skilled in this art would, based on a reading of the Specification and claims of the '278 application, readily understand that, flow rate can be modified in the method provided in claim 1 and as allowed specifically in the application in the above-identified passages. In particular, flow rate is shown to be modifiable as "the flow rate of the aqueous solution through the resin can be adjusted upwards."

✓23. It is therefore my opinion that any person skilled in this art could make and use the invention defined in claim 1 of the '278 application based on a reading of the Specification and claims and based on information known in this art at the time the '837 application was filed without undue experimentation.

24. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of this application or any patent issued thereon.

Signed on the 31 day of August, 2005
~~May, 2005.~~

Michael B Salisbury